

## **CURRICULUM VITAE**

### **PERSONNAL INFORMATION**

**Name:** Tessier, Philippe Alex

**Address:** Home: 1056, de St-Sébastien  
Cap-Rouge (Québec)  
Canada G1Y 2S5

Work: Centre de Recherche en Infectiologie  
Centre de Recherche du CHUL  
2705 Boul. Laurier  
Ste-Foy (Québec)  
Canada G1V 4G2

**Telephone:** Home: (418) 659-3874  
Work: (418) 654-2705  
Fax: (418) 654-2715

**E-mail:** Philippe.Tessier@crchul.ulaval.ca

**Nationality:** Canadian

**Languages:** French, English

## EDUCATION

- 1996-1999: Post-Doctoral Studies, Leukocyte Adhesion Laboratory, Imperial Cancer Research Fund, London, United Kingdom.  
Supervisor: Dr Nancy Hogg
- 1992-1996: Ph.D., Department of Microbiology-Immunology, Faculty of Medicine, Université Laval, Ste-Foy, Québec, Canada.  
Supervisor: Dr Paul H. Naccache, Co-Supervisor: Dr Shaun R. McColl  
Titre de la Thèse: "*Expression et rôle physiologique des molécules d'adhésion et des chimiokines dans l'inflammation synoviale*".
- 01-05/1995: « Visiting Fellow », Department of Microbiology and Immunology, The University of Adelaide, Adelaide, Australia.
- 1994-1995: « School Visitor », Division of Clinical Sciences, The John Curtin School of Medical Research, The Australian National University, Canberra, Australia.
- 1990-1992: M.Sc., Department of Physiology-Endocrinology, Faculty of Medicine, Université Laval, Ste-Foy, Québec, Canada.  
Supervisor: Dr Shaun R. McColl, Co-Supervisor: Dr Marie Audette.  
Titre du mémoire: "*Expression et rôle physiologique de la ICAM-1 dans les fibroblastes synoviaux rhumatoïdes*".
- 1987-1990: B.Sc., Department of Biochemistry, Faculty of Sciences, Université Laval, Ste-Foy, Québec, Canada.

## ACADEMIC POSITION

- 1999-2004 Assistant Professor, Department of Medical Biology, Faculty of Medicine, Université Laval
- 2004-present Associate Professor, Department of Medical Biology, Faculty of Medicine, Université Laval

## OTHER ACTIVITIES

- 2006-present Member, Commission des études, Université Laval
- 2005-2007 President, CPE Centre Jour Management Board, Québec, Canada
- 2003-present Member, Program committee, Microbiologie-Immunologie, Université Laval
- 2002-present Université Laval's appointee, CPE Centre Jour Management Board, Québec, Canada
- 2004-2005 Treasurer, CPE Centre Jour, Québec, Canada
- 1997-1998 Scientific writer, Le Matinternet (<http://matin.qc.ca/indexcyra.html>).

## AWARDS

### Scholarship

- 2003-2007 Chercheur-boursier Junior 2, Fonds de la Recherche en Santé du Québec, Canada  
1999-2003 Research Scholar, Arthritis Society of Canada, Canada

### Post-Doctoral studies

- 1997-2000 Fellowship, Medical Research Council of Canada, Canada  
1997-2000 Fellowship, Imperial Cancer Research Fund, United Kingdom  
1997-1999 Fellowship, Arthritis Society of Canada, Canada (declined)  
1996-1998 Fellowship Arthritis Society of Canada / Medical Research Council of Canada, Canada (declined)

### Ph.D.

- 1991-1994 Studentship, Fonds de la Recherche en Sante du Québec, Canada  
1991-1996 Studentship, Arthritis Society of Canada, Canada

## GRANTS

- 2007-2012 **Role of S100A8, S100A9, and S100A12 in neutrophil migration to inflammatory sites**, \$125 498, Canadian Institutes of Health Research, Canada, principal investigator.  
Aim of the study: The aim of this grant is to determine the mechanism of action of S100 proteins in directing neutrophil migration to inflammatory sites, with a particular emphasis on inflammatory bowel diseases.
- 2007-2008 **Effects of S100A8 and S100A9 inhibitors on collagen-induced arthritis**, \$50 000, Canadian Arthritis Network, Canada, principal investigator.  
Aim of the study: This grant is aimed at determining the role of S100A8 and S100A9 in a mouse model of arthritis.
- 2005-2010 **The Multi-Cellular Basis of Urate-induced Arthropathies**, US\$222 000/year, National Institutes of Health, U.S.A., co-investigator.  
Aim of the study: This grant is aimed at studying the effect of monosodium urate crystals on leukocytes.
- 2004-2005 **Blockade of S100A8, S100A9, and S100A12 as a new treatment for arthritis**, \$60,000/year, Institute of Musculoskeletal health and arthritis (Canadian Institutes of Health Research), Principal Investigator  
Aim of the study: This grant is aimed at generating blockers of S100A8, S100A9, and S100A12 and at testing these inhibitors as new therapeutic avenues for the treatment of arthritis
- 2003-2006 **Development of a plant based vaccination platform for hepatitis C virus**, \$185 404/year, Natural Sciences and Engineering Research Council, Canada, co-investigator.  
Aim of the study: This grant is aimed at generating an hepatitis C virus vaccine by modifying the Papaya Mosaic Virus to express hepatitis C virus proteins.
- 2002-2005 **Role of S100A8, S100A9, and S100A12 in neutrophil migration to inflammatory sites**, Principal Investigator, \$98,208/year, Canadian Institutes of

- Health Research, Canada  
 Aim of this grant: This grant is aimed at cloning, sequencing and characterising the receptors for S100A8, S100A9, and S100A12.
- 2000-2001 **Laboratoire d'étude de la migration des leucocytes.** Co-investigator, \$195,953 (Total budget \$490,294), Canadian Foundation for Innovation, Canada  
 Equipment grant for the purchase of an intravital videomicroscope and a confocal microscope.
- 2000-2001 **Starting Fund,** Principal Investigator, \$40,000, Régie Régional de la Santé et des Services Sociaux, Canada  
 Equipment grant
- 1999-2002 **Inflammation in gout : Role of the MRP proteins,** Principal Investigator, \$65,000/year Arthritis Society of Canada, Canada  
 Aim of the study: This grant was aimed at investigating the involvement of S100A8 and S100A9 in the generation of the inflammatory response associated with gout.
- 1999-2001 **Rôle des protéines MRP dans l'inflammation de la goutte.** Principal Investigator, \$20,000/year, Fonds de la Recherche en Santé du Québec, Canada  
 Equipment grant
- 1999-2000 **Persistent Organic Pollutants (POPs) et inflammation.** Co-investigator, \$15,000 for one year, Réseau de recherche en santé environnementale – FRSQ, Canada  
 Aim of the study : This grant was a pilot study of the effect of the POPs dieldrin and toxaphen on human neutrophil functions.
- 1999 **Subvention de démarrage,** Principal Investigator, \$15,000, Centre de Recherche du CHUL  
 Equipment grant

## RESEARCH CONTRACTS

- 2001-2003 Use of MRPs to induce neutrophilia. Principal Investigator, \$238,600, Innovatech-Québec, Canada

## PUBLICATIONS

1. N. Akeriz, C. Gilbert, P.A. Tessier. S100A9 enhances neutrophil migration across endothelial cells in response to IL-8 by activating  $\beta 2$  integrins. **Submitted to J. Biol. Chem.**
2. M.-A. Raquil, N. Akeriz, P. Rouleau, P.A. Tessier. Blockade of antimicrobial proteins S100A8 AND S100A9 inhibits phagocytes migration to the alveoli in streptococcal pneumonia. **J. Immunol., in press.**
3. E. Lorenz, M.S. Muhlebach, P.A. Tessier, N.E. Alexis, R. Duncan Hite, M.C. Seeds, D.B. Peden, W. Meredith. 2008. Different expression ratio of S100A8/A9 and S100A12 in acute and chronic lung diseases. **Respir Med., in press**
4. K. Mitchell, H.Y. Yang, P.A. Tessier, W.T. Muhly, W.D. Swaim, I. Szalayova, J.M. Keller, E. Mezey, M.J. Iadarola. 2008. Localization of S100A8 and S100A9 expressing neutrophils to spinal cord during peripheral tissue inflammation. *Pain*, 134(1-2):216-31.

5. F. Kukulski, F. Ben Yebdri, J. Lefebvre, M. Warny, **P.A. Tessier**, J. Sévigny. 2007. Extracellular nucleotides mediate LPS-induced neutrophil migration in vitro and in vivo. *J. Leuk. Biol.*, **81**(5):1269-75.
6. J. Denis, N. Majeau, E. Acosta-Ramirez, C. Savard, M.-C. Bedard, S. Simard, K. Lecours, M. Bolduc, C. Paré, B. Willems, N. Shoukry, **P.A. Tessier**, P. Lacasse, A. Lamarra, R. Lapointe, C. Lopez Macias, D. Leclerc. 2007. Immunogenicity of papaya mosaic virus like particles fused to a hepatitis c virus epitope: evidence for the critical function of multimerization. *Virology*, **363**(1):59-68.
7. N. Anceriz, K. Vandal, **P.A. Tessier**. 2007. S100A9 mediates neutrophil adhesion to fibronectin through activation of beta2 integrins. *Biochem Biophys Res Commun.* **354**(1):84-9.
8. J.N. Jarvis, H.R. Petty, Y. Tang, M.B. Frank, **P.A. Tessier**, I. Dozmorov, K. Jiang, A. Kindzelski, Y. Chen, C. Cadwell, M. Turner, P. Szodoray, J.L. McGhee, M. Centola. 2006. Evidence for chronic, peripheral activation of neutrophils in polyarticular juvenile rheumatoid arthritis. *Arthritis Res. Ther.* **8**(5):R154.
9. K. Greenlee, D.B. Corry, D. Engler, R. Matsunami, **P.A. Tessier**, R.G. Cook, Z. Werb, F. Kheradmand. 2006. Identification of In Vivo Substrates For MMP2/MMP9 Reveals A Mechanism For Resolution of Inflammation. *J. Immunol.* **177**(10):7312-21.
10. A. Hermani, B. De Servi, S. Medunjanin, **P.A. Tessier**, D. Mayer. 2006. S100A8 and S100A9 activate MAP kinase and NF-kappaB signaling pathways and trigger translocation of RAGE in human prostate cancer cells. *Exp. Cell Res.* **312**(2):184-97.
11. S. Bozinovski, M. Cross, R. Vlahos, J.E. Jones, K. Hsu, **P.A. Tessier**, D.A. Hume, J.A. Hamilton, C.G. Geczy, G.P. Anderson. 2005. Proteomic analysis identifies S100A8 as a glucocorticoid resistant determinant of neutrophilic lung inflammation in vivo. *J. Proteomic Res.* **14**(4): 136-145.
12. E. Lorenz, D.C. Chemotti, K. Vandal, **P.A. Tessier**. 2004. Toll-like receptor 2 represses nonpilus adhesin-induced signaling in acute infections with the *Pseudomonas aeruginosa* pilA mutant. *Infect. Immun.* **72**(8): 4561-4569.
13. C. Ryckman, C. Gilbert, R. de Médecis, A. Lussier, K. Vandal, **P.A. Tessier**. 2004. Monosodium urate monohydrate crystals induce the release of the proinflammatory protein S100A8/A9 from neutrophils. *J. Leukoc. Biol.*, **76**(2): 433-440.
14. M. Jaramillo, I. Plante, N. Ouellet, K. Vandal, **P.A. Tessier**, M. Olivier. 2004. Hemozoin-inducible proinflammatory events in vivo: potential role in malaria infection. *J. Immunol.*, **172**(5) :3101-3110.
15. K. Vandal, P. Rouleau, A. Boivin, C. Ryckman, M. Talbot, **P.A. Tessier**. 2003. Blockade of S100A8 and S100A9 suppresses neutrophil migration in response to LPS. *J. Immunol.* **171**(5):2602-2609.
16. C. Ryckman, S.R. McColl, K. Vandal, R. de Médecis, A. Lussier, P.E. Poubelle, **P.A. Tessier**. 2003. Role of S100A8 and S100A9 in neutrophil recruitment in response to monosodium urate crystals in the air pouch model of acute gouty arthritis. *Arthritis Rheum.*, **48**(8): 2310-2320.
17. P. Rouleau, K. Vandal, C. Ryckman, P.E. Poubelle, A. Boivin, M. Talbot, **P.A. Tessier**. 2003. The calcium-binding protein S100A12 induces neutrophil adhesion, migration, and release from bone marrow in mouse at concentrations similar to those found in human inflammatory arthritis. *Clin. Immunol.* **107**(1): 46-54.

18. C. Ryckman, K. Vandal, P. Rouleau, M. Talbot, P.A. Tessier. 2003. Proinflammatory activities of S100 proteins: S100A8, S100A9 and S100A8/A9 stimulate neutrophil chemotaxis and adhesion. *J. Immunol.* 170(6):3233-3242.
19. C. Ryckman, G.A. Robichaud, J. Roy, R. Cantin, M.J. Tremblay, P. A. Tessier. 2002. HIV-1 transcription and virus production are both accentuated by the proinflammatory myeloid related proteins in human CD4+ T lymphocytes. *J. Immunol.* 169(6): 3307-3313.
20. M. Robinson, P.A. Tessier, R. Poulson, N. Hogg. 2002. The S100 family heterodimer, MRP-8/14, binds with high affinity to heparin and heparan sulphate glycosaminoglycans on endothelial cells *J. Biol. Chem.*, 277(5): 3658-3665
21. M. Pelletier, C. J. Roberge, M. Gauthier, K. Vandal, P.A. Tessier, D. Girard. 2001. Activation of human neutrophils *in vitro* and dieldrin-induced neutrophilic inflammation *in vivo*. *J. Leuk. Biol.*, 70(3): 367-373.
22. R. Henderson, L.H.K. Lim, P.A. Tessier, M. Mathies, M. Perretti and N. Hogg. 2001. The use of LFA-1 deficient mice to determine the role of LFA-1, Mac-1 and  $\alpha 4$  integrin in the inflammatory response of neutrophils. *J. Exp. Med.*, 194(2): 219-226
23. M. Gauthier, C.J. Roberge, M. Pelletier, P.A. Tessier, D. Girard. 2001. Activation of human neutrophils by technical toxaphene. *Clin. Immunol. Immunopathol.*, 98(1):46-53.
24. P.A. Tessier, P.H. Naccache, K.R. Diener, R.P. Gladue, K. Neote, I. Clarke-Lewis, S.R. McColl. 1998. Induction of acute inflammation *in vivo* by Staphylococcal superantigens. II. Critical role for chemokines, ICAM-1, and TNF $\alpha$ . *J. Immunol.*, 161(3): 1204-1211.
25. K.D. Diener, P.A. Tessier, J.D. Fraser, F. Kontgen, S.R. McColl. 1998. Induction of acute inflammation *in vivo* by staphylococcal superantigens I. Leukocyte recruitment occurs independently of T lymphocytes and major histocompatibility complex Class II molecules. *Lab. Invest.*, 78(6): 647-656.
26. P.A. Tessier, K.R. Diener, P.H. Naccache, R.P. Gladue, K. Neote, I. Clarke-Lewis, S.R. McColl. 1997. Chemokine networks *in vivo*: Involvement of both C-X-C and C-C chemokines in neutrophil extravasation in response to tumour necrosis factor  $\alpha$ . *J. Immunol.* 159(7): 3595-3602.
27. P.A. Tessier, P. Cattaruzzi, S.R. McColl. 1996. Inhibition of lymphocyte adhesion to cytokine-activated synovial fibroblasts by glucocorticoids involves the attenuation of vascular cell adhesion molecule 1 and intercellular adhesion molecule 1 gene expression. *Arthritis Rheum.* 39(2): 226-234.
28. P.A. Tessier, M. Audette, P. Cattaruzzi, S.R. McColl. 1993. Upregulation by tumor necrosis factor $\alpha$  of intercellular adhesion molecule-1 expression and function in synovial fibroblasts and its inhibition by glucocorticoids. *Arthritis Rheum.* 36(11):1528-39.
29. M. Bouillon, P. Tessier, R. Bouliane, R. Destrempe, M. Audette. 1991. Regulation by retinoic acid of ICAM-1 expression on human tumor cell lines. *Biochem Biophys Acta* 1097(2): 95-102.

## BOOK CHAPTERS

1. P.A. Tessier, D. Girard. 207. in *Inflammation and neutrophils: A short introduction*. D. Girard Ed. Research Signpost, Kerala, India.
2. N. Anceriz, M.A. Raquil, P.A. Tessier. 2007. The proinflammatory functions of S100A8, S100A9, and S100A12. in *Phenotypic and functional changes of neutrophils activated by*

*recently identified modulators*. D. Girard Ed. Research Signpost, Kerala. India.

## PATENTS

1. Adjuvant viral particles  
Inventors: D. Leclerc, N. Majeau, **P.A. Tessier**  
Date of filing: 1 July 2003  
Filing number: 10/609,417
2. Compounds and method for modulating inflammatory reactions  
Inventors : **P.A. Tessier**, K. Vandal, P. Rouleau C. Ryckman  
Date of filing: 5 July 2002  
Filing number: USA 60/393,520  
International filing date: 20 June 2003  
International filing number: PCT/CA03/00939
3. Neutrophil activators and uses thereof  
Inventors: **P.A. Tessier**, K. Vandal, P. Rouleau C. Ryckman  
Date of filing: 28 March 2003  
Filing number: USA 60/450,022  
International filing date: 25 March 2004  
International filing number: PCT/CA2004/000451
4. Leukemia inhibitory factors and uses thereof  
Inventors: **P.A. Tessier**, K. Vandal, P. Rouleau C. Ryckman  
Date of filing: 13 July 2004  
Filing number: USA 60/587,033  
International filing date: 13 July 2005  
International filing number: PCT/CA2005/001089

## PUBLIC OR INVITED LECTURES

1. Amplification de la réponse immunitaire par les myeloid-related proteins. CHUM, Montreal, 5 April 2007.
2. Des amplificateurs de la réponse immunitaire : les « Myeloid-related proteins ». UQAM, Montreal, Canada, 4 April 2007.
3. S100A8 et S100A9 et la réponse inflammatoire. 5<sup>ième</sup> meeting of the Centre de recherche en rhumatologie et immunologie, Quebec, Canada, 27 november 2006.
4. S100A8 et S100A9 participent au recrutement des phagocytes dans la pneumonie à streptocoque. 48<sup>th</sup> meeting of the Club de Recherches cliniques du Québec, Lac-à-l'Eau-Claire, Canada, 22 September 2006
5. Les Myeloid Related Proteins et la migration des leucocytes aux sites infectieux. INRS-IAF, Montreal, Canada, 24 January 2006.
6. Le cri d'alarme des neutrophils. Centre de Recherche du CHUL, Ste-Foy, Canada, 16 june 2005.
7. Extracellular activities of S100A8, S100A9, and S100A12. NovoNordisk, Copenhagen,



Denmark. 9 February 2004

8. Les protéines S100: de petites protéines aux grands destins. Centre de Recherche du CHUL, Quebec city, Canada. 5 February 2004
9. Les myeloid related proteins et la goutte. INRS/IAF-Santé humaine, Montreal, Canada. 15 February 2000.
10. Les MRPs : nouveaux acteurs dans la migration leucocytaires. Centre de Recherche du CHUL, Quebec city, Canada. 2 April 1998
11. Les MRPs et la réaction inflammatoire. INRS-Santé, Montreal, Canada. 12 March 1998
12. Chemokine gene expression in a murine model of leukocyte recruitment to extravascular sites. Medicity, University of Turku, Finland. 12 July 1996.
13. Chemokine gene expression in a murine model of leukocyte recruitment to extravascular sites. The Imperial Cancer Research Fund, London, U.K. 10 July 1996.
14. Chemokine gene expression in a murine model of leukocyte recruitment to extravascular sites. William Harvey Research Institute, London, U.K. 9 July 1996.

## ABSTRACTS

1. N. Anceriz, C. Gilbert, **P.A. Tessier**. La S100A9 augmente la migration transendothéliale des neutrophiles. 49<sup>th</sup> Congrès du Club de Recherche Clinique du Québec, Lac-à-l'Eau-Claire, Canada, September 2007.
2. N. Anceriz, C. Gilbert, **P.A. Tessier**. S100A9 enhances neutrophil migration across human umbilical vein endothelial cells. 13<sup>th</sup> International Congress of Immunology, Rio de Janeiro, Brazil, August 2007.
3. M.-A. Raquil, K. Vandal, P. Rouleau, F. Barabé, C. Gilbert, **P.A. Tessier**. S100A8 and S100A9 proteins induce the proliferation of myeloid leukemia cells. 13<sup>th</sup> International Congress of Immunology, Rio de Janeiro, Brazil, August 2007.
4. 48<sup>th</sup> Congrès du Club de Recherche Clinique du Québec, Lac-à-l'Eau-Claire, Canada, September 2006. M.-A. Raquil, N. Anceriz, **P.A. Tessier**. Les protéines S100 et la migration des leucocytes au site infectieux. 48<sup>th</sup> Congrès du Club de Recherche Clinique du Québec, Lac-à-l'Eau-Claire, Canada, September 2006.
5. M.-A. Raquil, K. Vandal, P. Rouleau, **P.A. Tessier**. S100A8, S100A9, and S100A12 stimulate the proliferation of hematopoietic cells. 12<sup>th</sup> International Congress of Immunology and 4<sup>th</sup> Annual Conference of FOCIS, Montreal, Canada, July 2004.
6. N. Anceriz, K. Vandal, **P.A. Tessier**. Different effects of S100A8, S100A9, and S100A12 on neutrophil adhesion to endothelial cells and extracellular matrix proteins. 12<sup>th</sup> International Congress of Immunology and 4<sup>th</sup> Annual Conference of FOCIS, Montreal, Canada, July 2004.
7. J. Denis, P. Rouleau, K. Vandal, **P.A. Tessier**, D. Leclerc. The plant potyvirus Papaya Mosaic Virus triggers a strong immune response in mouse. 12<sup>th</sup> International Congress of Immunology and 4<sup>th</sup> Annual Conference of FOCIS, Montreal, Canada, July 2004.
8. K. Vandal, C. Ryckman, P. Rouleau, **P.A. Tessier**. The chemotactic factors S100A8 and S100A9 are involved in neutrophil release from bone marrow and migration to the

- inflammatory site in response to LPS. 17<sup>th</sup> Annual Spring Meeting of the Canadian Society for Immunology, Lake Louise, Canada, March 2003.
9. C. Ryckman, R. Cantin, G. Robichaud, M.J. Tremblay, **P.A. Tessier**. The pro-inflammatory Myeloid Related Proteins activate HIV replication in infected T-lymphocytes. 9<sup>th</sup> Conference on retroviruses and opportunistic infections. Seattle, USA, February 2002.
  10. C. Ryckman, K. Vandal, P. Rouleau, M. Talbot, **P.A. Tessier**. Myeloid related proteins are associated with neutrophil accumulation induced by monosodium urate crystals. Stockholm, Sweden, July 2001.
  11. C.J. Roberge, M. Gauthier, V. Lavaste, **P.A. Tessier**, D. Girard. Activation of human neutrophils *in vitro* and induction of neutrophilic inflammation *in vivo* by toxaphene. Canadian Society of Immunology 15<sup>th</sup> Annual Meeting, Lake Louise, Canada, April 2001.
  12. M. Gauthier, C.J. Roberge, **P.A. Tessier**, D. Girard. Propriétés pro-inflammatoires du toxaphène *in vivo* et *in vitro*. Colloque annuel du Centre de recherche en toxicologie de l'environnement (TOXEN), Montréal, Canada, December 2000.
  13. M. Pelletier, **P.A. Tessier**, D. Girard. Activation des neutrophiles *in vitro* et induction d'une inflammation neutrophilique *in vivo* par le dieldrine. Colloque annuel du Centre de recherche en toxicologie de l'environnement (TOXEN), Montréal, Canada December 2000.
  14. **P.A. Tessier**. Les Myeloid Related Proteins et la réponse inflammatoire, 68<sup>e</sup> congrès de l'Association Canadienne-Française pour l'Avancement des Sciences, Montréal, Canada, May 2000
  15. C. Ryckman, K. Vandal, **P.A. Tessier**. Sécrétion des protéines MRP (Myeloid Related Proteins) par les neutrophiles activés avec les cristaux d'urate monosodique (MSU). 68<sup>e</sup> congrès de l'Association Canadienne-Française pour l'Avancement des Sciences, Montréal, Canada, May 2000
  16. C. Ryckman, K. Vandal **P.A. Tessier**. Secretion of myeloid related proteins (MRP) by monosodium urate crystal-stimulated neutrophils. Canadian Society of Immunology. Bromont, Canada, March 2000.
  17. R.D. May, **P.A. Tessier**, M. J. Robinson, N. Hogg. A functional investigation of the murine S100 protein MRP-14, *in vitro* and *in vivo*. Inflammation Paris 99, Paris, France, June 1999.
  18. R.D. May, **P.A. Tessier**, M.J. Robinson, N. Hogg. A functional investigation of the murine S100 protein MRP-14, *in vitro* and *in vivo*. Workshop on neutrophil development and functions. Madrid, Spain, April 1999.
  19. R. May, **P.A. Tessier**, M. J. Robinson, N. Hogg. Expression of murine MRP-14: *in vitro* and *in vivo* functions. Imperial Cancer Research Fund Annual Colloquium, Warwick, U.K., April 1998.
  20. N. Hogg, A. McDowall, **P.A. Tessier**, R. Newton. Regulation of  $\beta_2$  integrin function. Keystone meeting on leukocyte-endothelium adhesion. Lake Tahoe, Colorado, U.S.A., March 1998.
  21. **P.A. Tessier**, P.A. Hessling, R. Poulson, N. Hogg. Myeloid cells releases MRP proteins onto endothelium. 12<sup>th</sup> Spring meeting of the Canadian Society for Immunology, Sainte-Adèle, Canada, March 1998.
  22. **P.A. Tessier**<sup>1</sup>, P.H. Naccache, K. Neote, S.R. McColl. Induction by TNF $\alpha$  of chemokine gene expression in a murine model of leukocyte recruitment to extravascular sites. 10<sup>th</sup>

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<sup>1</sup>Selected for oral presentation in a workshop.

- Spring meeting of the Canadian Society for Immunology, Sainte-Adèle, Canada, March 1996.
23. **P.A. Tessier**, P.H. Naccache, K. Neote, S.R. McColl. Chemokine gene expression in a murine model of leukocyte recruitment to extravascular sites. Chemotactic cytokines: Targets for novel therapeutic development, Philadelphia, Pennsylvania, U.S.A., October 1995.
  24. **P. Tessier**, S.R. McColl. Involvement of both ICAM-1 and VCAM-1 in the adhesion of monocytes and lymphocytes to synovial fibroblasts. Joint Meeting of the American Association of Immunologists and the Clinical Immunology Society, Denver, Colorado, U.S.A., May 1993.
  25. **P. Tessier<sup>1</sup>**, M. Audette, S.R. McColl. Regulation by tumor necrosis factor  $\alpha$  of intercellular adhesion molecule-1 gene expression in human synovial fibroblasts. Annual Meeting of the Royal College of Physicians and Surgeons of Canada, Quebec city, Canada, September 1991.
  26. **P. Tessier**, M. Audette, S.R. McColl. Regulation by tumor necrosis factor  $\alpha$  of intercellular adhesion molecule-1 gene expression in human synoviocytes. Federation of American Societies for Experimental Biology, Atlanta, U.S.A., April 1991.
  27. M. Audette, M. Bouillon, **P. Tessier**. Stimulated expression of intercellular adhesion molecule-1 (ICAM-1) by retinoic acid on human tumor cell lines. Karger Symposium "Cell to Cell Interaction", Basel, Switzerland, August 1990.
  28. M. Bouillon, N. Liao, **P. Tessier**, M. Audette. Expression de la ICAM-1 sur des lignées de tétarocarcinomes humains et régulation de son expression par l'acide rétinolique. Association Canadienne-Française pour l'Avancement des Sciences, 58<sup>ème</sup> Congrès, Quebec city, Canada, May 1990.

## OTHER ACTIVITIES

### COMMITTEE MEMBERSHIP

#### Peer review committees

- |           |                                                                   |
|-----------|-------------------------------------------------------------------|
| 2005-2007 | Member, Strategic Training Program Grant Mid-Term Committee, CIHR |
| 2001-2002 | Member, Immunology Committee, Arthritis Society grant program     |
| 2000      | Invitee, Immunology Committee, Arthritis Society grant program    |

#### Meetings

- |           |                                                                                                                                                                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2006      | Chairman, Colloque sur l'inflammation et l'apoptose, 48 <sup>th</sup> meeting of the Club de Recherches cliniques du Québec, Lac-à-l'Eau-Claire, Canada, September 2006 |
| 2006      | Chairman, Workshop on Inflammation and Transplantation, Canadian Society for Immunology 19th Annual meeting, Halifax, June 2006                                         |
| 2003      | Organiser, Microbiology, Virology and Immunology section, 71 <sup>st</sup> ACFAS meeting, Rimouski, May 2003                                                            |
| 2002-2004 | Organiser, Social activities, 12 <sup>th</sup> International Congress of Immunology, Montreal, July 2004                                                                |
| 2002      | Organiser, Microbiology, Virology and Immunology section, 70 <sup>th</sup> ACFAS meeting, Quebec City, May 2002                                                         |

## **REVIEWER**

Associate editor, *Journal of Immunology* (2007-present)

### **Reviewer**

*Acta Paediatrica*

*American Journal of Respiratory Care Critical Medicine*

*Arthritis Research & Therapy*

*European Pharmacology*

*FASEB Journal*

*International Immunopharmacology*

*Journal of Biological Chemistry*

*Journal of Immunology*

*Journal of Investigative Dermatology*

*Journal of Leukocyte Biology*

*Journal of Parasitology*

*Neurobiology of Aging*

## **SUPERVISORY EXPERIENCE**

1. Alain Boulende, M.Sc. (co-supervisor), Microbiology-Immunology, Faculty of Medicine, Université Laval, 2005-2006.
2. Jérôme Denis, Ph.D. (co-supervisor), Microbiology-Immunology, Faculty of Medicine, Université Laval, 2003-present.
3. Marie-Astrid Raquil, Ph.D., Microbiology-Immunology, Faculty of Medicine, Université Laval, 2003-present.
4. Nadia Anceriz, Ph.D., Microbiology-Immunology, Faculty of Medicine, Université Laval, 2003-present.
5. Pascal Rouleau, M.Sc., Microbiology-Immunology, Faculty of Medicine, Université Laval, 2002-2003.
6. Carle Ryckman, Ph.D., Microbiology-Immunology, Faculty of Medicine, Université Laval, 1999-2004.

## **THESIS (REFeree)**

### **Ph.D.**

1. Jocelyn Roy  
Microbiology-Immunology, Faculty of medicine, Université Laval, 5 July 2007  
Examinator
2. Carle Ryckman

Microbiology-Immunology, Faculty of medicine, Université Laval, 25 February 2004

Supervisor

3. Claudine Matte

Microbiology-Immunology, Faculty of medicine, Université Laval, 15 February 2000

Examinator

**M.Sc.**

1. Marie-Christine Dumas

Microbiology-Immunology, Faculty of medicine, Université Laval, 9 May 2007

Examinator

2. Marie-Ève Champagne

Microbiology-Immunology, Faculty of medicine, Université Laval, 1 May 2007

Examinator

3. Catherine Matron

Microbiology-Immunology, Faculty of medicine, Université Laval, 20 February 2007

Examinator

4. Alain Boulende

Microbiology-Immunology, Faculty of medicine, Université Laval, 20 October 2006

Co-supervisor

5. Jean-François Gauthier

Microbiology-Immunology, Faculty of medicine, Université Laval, 4 October 2006

Examinator

6. Caroline Bélanger

Pharmacie, Faculté de pharmacie, Université de Montréal, 22 August 2006

Examinator

7. Valérie Garceau

Microbiology-Immunology, Faculty of medicine, Université Laval, 15 September 2003

Examinator

8. Claude Ratthé

INRS-IAF/Santé humaine, 3 June 2003

Examinator

9. Andrée Maheux

Microbiology-Immunology, Faculty of medicine, Université Laval, 10 February 2003

Examinator

10. Pascal Rouleau

Microbiology-Immunology, Faculty of medicine, Université Laval, 22 Janary 2003

Supervisor

11. Julie Nieminen

Microbiology-Immunology, Faculty of medicine, Université Laval, 17 January 2003

Examinator

12. Geneviève Lachance

Microbiology-Immunology, Faculty of medicine, Université Laval, 24 April 2002

Examinator

13. Marc Gauthier

INRS-IAF/Santé humaine, 15 October 2001

- Examinator
14. Valérie Lavastre  
INRS-IAF/Santé humaine, 17 September 2001  
Examinateur externe
  15. Frédéric Dallaire  
Microbiology-Immunology, Faculty of medicine, Université Laval, 14 February 2001  
Examinator
  16. Martin Pelletier  
INRS-IAF/Santé humaine, 29 September 2000  
Examinator
  17. Philippe Desaulniers  
Microbiology-Immunology, Faculty of medicine, Université Laval, 19 June 2000  
Examinator
  18. Isabelle Filion  
Microbiology-Immunology, Faculty of medicine, Université Laval, 20 October 1999  
Examinator

## TEACHING

### Undergraduate (Total 37 hours)

- 2006-present Immunologie médicale (MCB-21551), 1 credit 15 heures (1er cycle)  
Coordinator
- 2005-present Pharmacologie moléculaire (PHM2302, U. de Montréal), 3 credit, 2 heures (1<sup>er</sup> cycle), Collaborator
- 2004-present Immunologie médicale (MCB-17902), 1 credit, 20 heures (1er cycle)  
Coordinator

### Graduate (Total 78 hours)

- 2003-present Séminaire I (MCB-62699), 1 credit, 30 heures  
Coordinator
- 2003-present Séminaire II (MCB-64140), 1 credit, 30 heures  
Coordinator
- 2003-present La réaction inflammatoire (MCB-63801), 3 crédits, 3 heures (2<sup>e</sup> et 3<sup>e</sup> cycles)  
Collaborator
- 2003-present Cytokines, chimiokines et facteurs de croissance (PHM6034, U. de Montréal), 3 credits, 6 heures (2<sup>e</sup> cycle), Collaborator
- 2000-present Immunopathogénèse des maladies infectieuses (MCB-63803), 3 credits, 3 heures (2<sup>e</sup> et 3<sup>e</sup> cycles), Collaborator
- 2000-present Immunologie cellulaire (MCB-63602), 3 credits, 3 heures (2<sup>e</sup> et 3<sup>e</sup> cycles)  
Collaborator

## SUMMARY OF RESEARCH

For the last ten years, I have been studying new cytokines (S100A8, S100A9, and S100A12), collectively referred to as myeloid related proteins. S100A8, S100A9, and S100A12 are small proteins expressed abundantly in the cytosol of neutrophils and at lower levels in monocytes. They exist as noncovalently bonded homodimers and form a noncovalent heterodimer called S100A8/A9 or calprotectin.

Massive levels of S100A8/A9 are observed in the feces and serum of patients who have Crohn disease and ulcerative colitis, as well as in the synovial fluids of patients with arthritis and gout. We have recently demonstrated that these proteins are essential to neutrophil migration. We and others demonstrated that they are secreted during neutrophil interaction with the endothelium. In addition, we demonstrated that S100A8, S100A9, and S100A12 are chemotactic for neutrophils and induce their adhesion to fibrinogen, fibronectin and endothelial cells. More importantly, up to 80% of neutrophil and macrophage migration to the inflamed lung alveoli is abrogated by anti-S100A8 and anti-S100A9. Contrarily to chemokines which are inducers of leukocyte migration, S100 proteins appear to be enhancers of neutrophil migration. This different activity could explain why blocking of S100A8 and S100A9 consistently leads to higher inhibition of leukocyte migration than blocking chemokines. Thus, they play a key role in leukocyte migration, but their exact mechanism of action remains largely unknown.

We presume that neutrophils release S100A8/A9 as they migrate to assist the migration of subsequent leukocytes. We are currently testing this hypothesis by examining the migration of leukocytes to inflammatory sites using intravital microscopy. In addition, we are investigating the role of S100A8/A9 in the mouse collagen-induced arthritis model, as well as in models of inflammatory bowel diseases.

High concentrations of S100 proteins in serum also occur in patients suffering of acute and chronic myeloid leukemia. We recently demonstrated that S100A8, S100A9, and S100A12 induce the release of neutrophils from the bone marrow to the peripheral blood. Unpublished observations indicate that S100A8, S100A9, and S100A12 induce the proliferation of acute and chronic leukemia cells at concentrations similar to those detected in the sera of leukemia patients. More importantly, addition of Abs against S100A8 and S100A9 blocked the proliferation of leukemia cells induced by autologous serum, suggesting S100 proteins may be secreted by leukemia cells to act in an autocrine fashion. Thus, we are currently investigating the roles of S100 proteins in cell proliferation.